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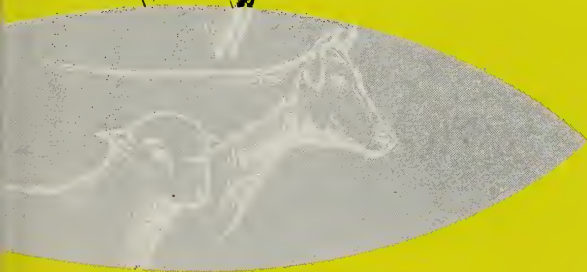


REDUCING LIVESTOCK LOSSES

from

Water Hemlock
POISONING

in the
Western States



PA-330

UNITED STATES DEPARTMENT OF AGRICULTURE

REDUCING LIVESTOCK LOSSES

from

Water Hemlock POISONING

in the Western States

Water hemlock¹ is probably the most poisonous plant in the United States. Only a small amount of the toxic substance is necessary to produce poisoning in livestock—or in man.

The underground portions of the plant, especially the tuberous roots, are very dangerous. Severe livestock losses may occur when the roots become exposed and are eaten

by animals. People are sometimes poisoned by eating the roots, which they mistake for wild parsnips.

The toxic substance in water hemlock is cicutoxin, a thick yellowish liquid that has a strong carrotlike odor. It is found principally in the roots, but is also present in the leaves and stems during early growth. Leaves and stems lose most of their toxicity as they mature.

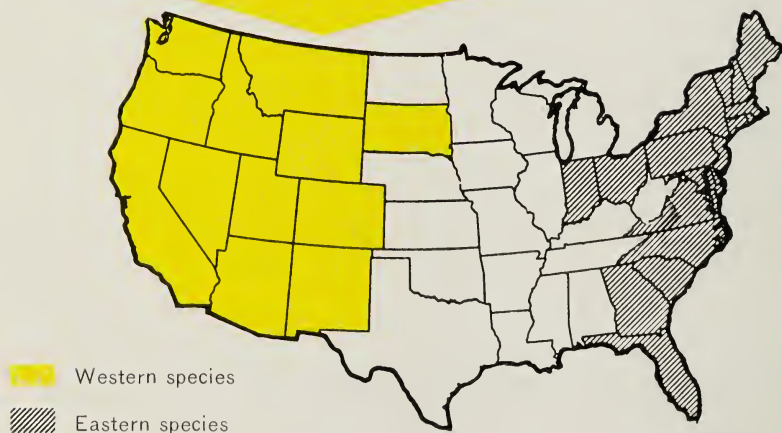
Where and When It Grows

Water hemlock, a wet-land plant, is commonly found in wet meadows and pastures and along streams. It

starts growth in the spring, and in the higher elevations flowers in June or July.

¹ *Cicuta douglasii* is a common species in the western range States where most livestock losses occur. *C. maculata* is a common species in the eastern States. About eight species of water hemlock occur in the United States.

DISTRIBUTION OF WATER HEMLOCK





TN-18



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Water hemlock has a thickened rootstock to which are attached roots that may be slender or may take the form of a group of thick, fleshy tubers. When cut longitudinally, the rootstock shows a number of transverse chambers that contain the toxic substance. A distinctive characteristic of the leaves is the arrangement of side veins; these veins lead to notches, not to the tips at the outer margin. Small, white flowers grow in umbrella-like clusters. The plant, a perennial, belongs to the parsley family.

**IF POISONING OCCURS IN HUMAN BEINGS, IMMEDIATELY INDUCE
VOMITING. CALL A DOCTOR.**

How It Affects Livestock

Livestock usually show symptoms of poisoning 1 to 12 hours after they eat the plant; they may die within a few hours after symptoms appear.

Symptoms of water hemlock poisoning

- | | |
|---------------------|---------------------------|
| 1. Muscle twitching | 5. Convulsions |
| 2. Rapid pulse | 6. Dilation of the pupils |
| 3. Rapid breathing | 7. Excessive salivation |
| 4. Tremors | 8. Frothing at the mouth |

How To Reduce Livestock Losses

Livestock owners can reduce losses by keeping animals away from places where water hemlock grows, and by eradicating the plants.

The plants usually grow in small patches, and are easy to locate and eradicate. They can be eradicated by grubbing or by spraying them with a herbicide, such as 2,4-D or

2,4,5-T. If they are grubbed, all plant parts, especially the roots, must be gathered and burned. If they are sprayed, follow-up treatments are necessary until eradication is completed.

There is no effective treatment for water hemlock poisoning. Toxic substances act so rapidly that an affected animal can seldom be saved.

Where To Obtain More Information

You can obtain more information on water hemlock poisoning by getting in touch with your county agricultural agent or by writing to your State agricultural experiment station or to the U. S. Department of Agriculture. Consult your local

veterinarian if you have questions.

Note: The map on page 2 shows areas where most livestock poisoning has been reported. It is possible that water hemlock grows in areas other than those indicated on the map.

Know Poisonous Plants • Reduce Livestock Losses

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